

ROUTE 460 LOCATION STUDY
PROJECTED RANGE OF COSTS 2005 DOLLARS
Candidate Build Alternatives (CBA's)
All Costs Indicated in Millions (\$1,000,000)

CBA	Construction Costs ¹	MOT ²	Utilities ³	ROW ⁴	Design & Construction Admin ⁵	Total Estimated Capital Costs	Projected Range of Costs -10%/+20%	
							Low	High
1	\$ 384	\$ 3	\$ 27	\$ 24	\$ 85	\$ 522	\$ 470	\$ 627
2	\$ 429	\$ 21	\$ 86	\$ 35	\$ 94	\$ 665	\$ 599	\$ 798
3	\$ 411	\$ 3	\$ 29	\$ 17	\$ 90	\$ 550	\$ 495	\$ 660
1 with Shift	\$ 365	\$ 3	\$ 26	\$ 13	\$ 80	\$ 487	\$ 439	\$ 585
Hybrid 1 w / Shift	\$ 432	\$ 3	\$ 30	\$ 10	\$ 95	\$ 570	\$ 513	\$ 683
Hybrid 2 w/Shift	\$ 446	\$ 3	\$ 31	\$ 9	\$ 98	\$ 588	\$ 529	\$ 705

1. VDOT Updated Cost Estimates 09/28/05. This figure includes wetland mitigation. Cost calculated as a sum of the Construction Estimate and Bridge Estimate in attached spreadsheet.
2. CBA 1 and 3 = 0.73% of Construction Costs; CBA 2 = 5% of Construction Costs
3. Utilities cost = 7% of construction cost for new location (CBAs 1&3), and 20% for CBA 2.
4. Updated using same methodology as ROW Cost Technical Report (March 2005).
5. 22% of Construction Costs
6. Factors utilized for contingency, MOT, mitigation, and design were developed from comparable cost elements from the I-73 Location Study, Capital Cost Technical Memorandum, October 2000.
7. Assumption: Construction Costs include excavation, pavement, miscellaneous roadway items, drainage/stormwater, structures, interchanges, signage, pavement markings, lighting and landscaping.

			Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
CBA 1		Construction Estimate	\$51,790,000	\$74,019,000	\$0	\$42,038,000	\$41,281,000	\$31,324,000	\$240,452,000
		Preliminary Engineering Estimate	\$7,643,000	\$10,586,000	\$0	\$6,130,000	\$6,222,000	\$4,232,000	\$34,813,000
		Bridge Estimate	\$24,579,000	\$32,477,000	\$0	\$33,941,000	\$46,818,000	\$6,185,000	\$144,000,000
		Right-of-Way Estimate	\$8,001,186	\$3,470,740	\$0	\$1,026,259	\$7,048,339	\$4,544,582	\$24,091,106
		Utilities							\$52,850,000
		Project Estimate	\$92,013,186	\$120,552,740	\$0	\$83,135,259	\$101,369,339	\$46,285,582	\$496,206,106
CBA 2	Raised		Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
		Construction Estimate	\$20,017,000	\$30,404,000	\$0	\$9,512,000	\$17,437,000	\$0	\$77,370,000
		Preliminary Engineering Estimate	\$3,442,000	\$4,707,000	\$0	\$1,470,000	\$2,439,000	\$0	\$12,058,000
		Bridge Estimate	\$47,450,000	\$42,295,000	\$0	\$0	\$5,927,000	\$0	\$95,672,000
		Segment Estimate	\$70,909,000	\$77,406,000	\$0	\$10,982,000	\$25,803,000	\$0	\$185,100,000
	Graded		Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
		Construction Estimate	\$12,857,000	\$44,527,000	\$4,693,000	\$24,781,000	\$31,886,000	\$26,139,000	\$144,883,000
		Preliminary Engineering Estimate	\$1,887,000	\$6,021,000	\$941,000	\$3,929,000	\$4,704,000	\$3,676,000	\$21,158,000
		Bridge Estimate	\$2,245,000	\$4,490,000	\$0	\$46,204,000	\$37,237,000	\$7,370,000	\$97,546,000
		Segment Estimate	\$16,989,000	\$55,038,000	\$5,634,000	\$74,914,000	\$73,827,000	\$37,185,000	\$263,587,000
	Flush		Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
		Construction Estimate	\$7,923,000	\$0	\$0	\$5,531,000	\$0	\$0	\$13,454,000
		Preliminary Engineering Estimate	\$1,068,000	\$0	\$0	\$1,056,000	\$0	\$0	\$2,124,000
		Bridge Estimate	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		Segment Estimate	\$8,991,000	\$0	\$0	\$6,587,000	\$0	\$0	\$15,578,000
	Totals	Construction Estimate	\$40,797,000	\$74,931,000	\$4,693,000	\$39,824,000	\$49,323,000	\$26,139,000	\$235,707,000
		Preliminary Engineering Estimate	\$6,397,000	\$10,728,000	\$941,000	\$6,455,000	\$7,143,000	\$3,676,000	\$35,340,000
		Bridge Estimate	\$49,695,000	\$46,785,000	\$0	\$46,204,000	\$43,164,000	\$7,370,000	\$193,218,000
Right of Way Estimate		\$9,741,456	\$6,535,131	\$152,870	\$3,619,700	\$9,402,693	\$5,086,756	\$34,538,606	
Utilities								\$145,000,000	
Project Estimate		\$106,630,456	\$138,979,131	\$5,786,870	\$96,102,700	\$109,032,693	\$42,271,756	\$643,803,606	
CBA 3		Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals	
	Construction Estimate	\$58,657,000	\$51,521,000	\$23,655,000	\$35,305,000	\$31,615,000	\$24,186,000	\$224,939,000	
	Preliminary Engineering Estimate	\$8,392,000	\$7,570,000	\$3,764,000	\$5,007,000	\$5,057,000	\$3,481,000	\$33,271,000	
	Bridge Estimate	\$45,346,000	\$46,785,000	\$35,156,000	\$25,769,000	\$25,972,000	\$7,370,000	\$186,398,000	
	Right of Way Estimate	\$4,270,248	\$1,644,468	\$856,240	\$1,076,732	\$3,742,827	\$5,086,756	\$16,677,271	
	Utilities							\$56,910,000	
	Project Estimate	\$116,665,248	\$107,520,468	\$63,431,240	\$67,157,732	\$66,386,827	\$40,123,756	\$518,195,271	

ROW Estimates from ROW Cost Technical Report, Michael Baker, March 2005
Narrow ROW estimates used (representing estimated construction limits of 230' ROW)
Utilities costs estimated as a basis of ROW cost...not determined by jurisdiction

			Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
CBA 1 w/ Shift		Construction Estimate	\$51,790,000	\$74,019,000	\$0	\$42,038,000	\$42,378,000	\$31,324,000	\$241,549,000
		Preliminary Engineering Estimate	\$7,643,000	\$10,586,000	\$0	\$6,130,000	\$6,004,000	\$4,232,000	\$34,595,000
		Bridge Estimate	\$24,579,000	\$32,477,000	\$0	\$33,941,000	\$26,547,000	\$6,185,000	\$123,729,000
		Right-of-Way Estimate	\$8,001,186	\$3,470,740	\$0	\$1,026,259	\$7,048,339	\$4,544,582	\$24,091,106
		Utilities							\$52,850,000
		Project Estimate	\$92,013,186	\$120,552,740	\$0	\$83,135,259	\$81,977,339	\$46,285,582	\$476,814,106
Hybrid Option 1 w/ CBA 1 Shift			Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
		Construction Estimate	\$58,657,000	\$57,071,000	\$23,655,000	\$42,038,000	\$42,378,000	\$31,324,000	\$255,123,000
		Preliminary Engineering Estimate	\$8,392,000	\$7,983,000	\$3,764,000	\$6,130,000	\$6,004,000	\$4,232,000	\$36,505,000
		Bridge Estimate	\$45,346,000	\$29,428,000	\$35,156,000	\$33,941,000	\$26,547,000	\$6,185,000	\$176,603,000
		Right-of-Way Estimate	\$4,270,248	\$1,644,468	\$856,240	\$1,026,259	\$7,048,339	\$4,544,582	\$19,390,136
		Utilities							\$52,850,000
		Project Estimate	\$116,665,248	\$96,126,468	\$63,431,240	\$83,135,259	\$81,977,339	\$46,285,582	\$540,471,136
Hybrid Option 2 w/ CBA 1 Shift			Prince George County	Sussex County	Surry County	Southampton County	Isle of Wight County	City of Suffolk	Totals
		Construction Estimate	\$58,657,000	\$56,771,000	\$23,655,000	\$42,038,000	\$42,378,000	\$31,324,000	\$254,823,000
		Preliminary Engineering Estimate	\$8,392,000	\$8,135,000	\$3,764,000	\$6,130,000	\$6,004,000	\$4,232,000	\$36,657,000
		Bridge Estimate	\$45,346,000	\$43,982,000	\$35,156,000	\$33,941,000	\$26,547,000	\$6,185,000	\$191,157,000
		Right-of-Way Estimate	\$4,270,248	\$1,644,468	\$856,240	\$1,026,259	\$7,048,339	\$4,544,582	\$19,390,136
		Utilities							\$52,850,000
		Project Estimate	\$116,665,248	\$110,532,468	\$63,431,240	\$83,135,259	\$81,977,339	\$46,285,582	\$554,877,136

ROW Estimates in blue have not been recalculated to represent the shift or connections
Bridge Estimates in red were calculated on approximate bridge lengths over wetlands
Hybrid Option 2 assumed Graded Median on CBA 2 alignment on existing facility